mapping VT ($n = 1$). In 3 patients ICD was implanted after ablation. 7 patients (87.5%) survived to discharge and are on regular follow up (19.71 ± 12.08 months) and none had any recurrence of VT or ICD shocks since discharge. 1 patient expired due to pulmonary complications 2 weeks after ablation.
Conclusion: ES is a challenging clinical problem. VT ablation and stellate ganglionectomy has improved outcomes.

Improve SCA trial. Initial experience in India

Balbir Singh*, Azlan Hussin, Dejia Huang, Chi-Keong Ching, Diego A. Rodriguez, Young-Hoon Kim, Yen-Bin Liu, Alexandr Robertovich Chasnoits, Jeffrey Cerkvenik, Sarah Willey, Shu Zhang

Medanta, The Medicity Hospital, Gurgaon, Haryana, India

Introduction: Improve SCA aims to find a group of primary prevention ICD patients with VT/VF treatment rates similar to secondary prevention patients. The study intends to enroll 4800 patients worldwide, with approximately 1600 coming from India. We hypothesized rates of ICD implant vary by country.
Methods: At baseline, patients were identified as either primary or secondary prevention. Primary prevention patients who met at least one of four risk criteria (syncope, NSVT, frequent PVCs, or LVEF < 25%) were identified as 1.5 patients, those who did not meet criteria are labeled 1.0 patients. The decision to implant an ICD was at the patient's discretion, e.g., to choose whether or not they wished to receive a device implant.
Results: Through 14 months of study enrollment, 236 out of 994 patients enrolled were from India. The overall average age was 59.0 ± 13.6, with a 74%/26% male/female distribution. Patients had been enrolled from 12 different countries. Of those enrolled, 825 (158 in India) had complete baseline/implant data, 31% (16% in India) of whom were secondary prevention patients. Of the primary prevention patients, 70% (65%) were in the 1.5 category. As expected, the rate of implant in India varied depending on the indication, with 92% of secondary prevention patients, 31% of 1.5 patients, and 22% of 1.0 patients choosing implant.
Conclusion: Initial enrollment in the improve SCA study, conducted in emerging countries, has seen a large percentage of primary prevention patients. Percent of patients declining ICD therapy varies by indication and country. In India, a greater number of primary prevention patients have declined implant.

Successful retrieval of J-guidewire from right atrium accidentally dislodged during temporary pacing

B. Paul*, A.K. Boro, P.K. Gupta, H. Rahaman

Department of Cardiology, GNRC Hospitals (Dispur), Guwahati, India

Introduction: Conduction system disorder is one of the leading cause of morbidity and mortality in India specially in the eastern part. Most of the patients present to the emergency department with bradycardia and asystole and they need to be treated immediately by temporary pacemaker implantation followed by implantation of permanent pacemaker. Although fluoroscopy is needed for the very purpose, but sometimes due to emergency situation temporary transvenous pacemaker are implanted without fluoroscopy at bedside Guidewire-associated complications can occur during the process of sheath insertion, eg: kinking, looping, and knotting. Rarely the wire can be dislodged in the vasculature, where it can cause vessel damage, major hemorrhage, or embolization to vital structures. We report a case of J-guidewire dislodged accidentally to the right atrium. The guidewire was successfully withdrawn with the help of a pigtail catheter under fluoroscopic guidance. The patient remained hemodynamically stable throughout the procedure. In this way, we averted an open surgical procedure.
Case report: A 65-year-old diabetic male, known case of CAD, post CABG presented with 2 episodes of syncope to the emergency department. His pulse was 20/min and BP was 40 mmHg (systolic). ECG showed complete heart block. As the cathlab was occupied by ongoing procedure, so, temporary pacemaker was implanted through femoral vein immediately after admission at the bedside and patient became stable. Next day, he was taken to cathlab for permanent pacemaker implantation. On OT table, when we checked the position of temporary pacemaker lead, we were surprised to see that the short J-guidewire is present inside the heart; curved upper end being at the top of right atrium. To avoid open cardiac surgery, we decided to retrieve the wire under fluoroscopic guidance. Unfortunately snare was not available, so we tried to apply some ideas so that it can be removed under fluoroscopy. First, we removed the temporary pacemaker lead as the patient was in sinus rhythm at that time. Then, we tried to insert a long femoral sheath over the lower end of the J-wire with the intent to insert a PTCA wire and balloon and subsequently to remove the wire by inflating the balloon and pressing the wire against the inner wall of the sheath. But we failed in the first step. Then, we tried with a handmade snare out of a PTCA wire; again we failed. Next, we inserted another J-wire and tried to wrap it around the dislodged wire; but whenever, we tried to pull it, it slipped away. Finally, we introduced a 5 F pigtail catheter, and wrapped it around the J-wire. With gentle pull, it came down from right atrium and the lower end engaged in femoral vein. With a small incision over femoral vein, we removed the J-wire and we averted an open surgical procedure.
Discussion: Complete heart block with syncope is one of the important cardiac emergency and need to treated with immediate transvenous temporary pacemaker implantation. Although temporary pacemaker lead implantation is a simple procedure, one should be extremely careful. Preferably, it should be done in the cathlab. Depending upon personal preferences, it can be done through femoral, jugular and subclavian vein. After the procedure, one should always check that the needle, J-wire, dilator is discarded. Snare should always be available at the cathlab. Innovative ideas can avert many complications. One should have patience during any complication.

Under-utilization of pacemaker therapy for sinus node dysfunction – Real world data from South Asia

Calambur Narasimhan

Senior Consultant Electrophysiologist, Care Hospitals, Road No. 1, Banjara Hills, Hyderabad 500034, India

Introduction: Symptoms caused by sinus node dysfunction (SND), the most common bradyarrhythmia, can only be mitigated by permanent cardiac pacing. Yet pacemaker therapy remains underutilized in developing regions of the world. The IMPROVE Brady study is the first prospective evaluation aimed to identify factors related to therapy prescription in underserved regions.
Methods: Patients presenting with symptoms such as fatigue, shortness of breath, and syncope, a heart rate of ≤50 beats per

Table 1 – Multi-variable analysis of factors affecting pacemaker implant probability.

Parameter	OR (95% CI)	*p*-Value
Age (per year)	1.03 (1.01, 1.06)	0.005
Female gender	2.41 (1.21, 4.79)	0.01
Contributes financially to household	0.58 (0.29, 1.14)	0.11
Syncope/presyncopal symptoms 30 days prior to baseline visit	4.35 (2.26, 8.35)	<0.0001
Education (vs none formal)		
Primary	0.96 (0.32, 2.86)	0.27
Secondary/High School	1.65 (0.54, 5.09)	0.38
College/Graduate	1.78 (0.59, 5.38)	0.23

minute, and without AV block were enrolled and followed in effort to identify the proportion diagnosed with SND and subsequently treated. Rationale for not receiving pacemaker therapy for SND was recorded. A multivariable logistic regression assessed the association between baseline characteristics and probability of receiving an implant after SND diagnosis.

Results: Patients (n = 510) enrolled from India and Bangladesh were more likely to be male (78%), with a mean age of 58 ± 15 years, and a history of Sinus brady/SND (63%) at baseline. Through 8.4 ± 8.0 months follow-up, 369 received an SND diagnosis and 61 (17%) of patients were implanted with a pacemaker. Insurance-related issues (34%), physician preference for other medical management (23%), patient not agreeing that their condition warranted implant (22%), and physician determining patient was not indicated (19%) were the dominant reasons for declining a pacemaker. Higher age, female gender, and syncopal or pre-syncopal symptoms 30 days prior to baseline visit were associated with a higher probability of implant (Table 1).

Conclusions: In a real-world assessment in South Asia, 1 in 6 patients diagnosed with symptomatic SND receive a permanent cardiac pacemaker with less than half of declines being related to insurance reasons. Younger males were the least likely to receive therapy. A process improvement initiative is warranted to improve the diagnosis and therapy application.

Prevalence and predictors of ventriculoatrial conduction in structurally normal hearts

Ganesh Patil*, Sachin Gavade, Umesh Khedkar, Ajaykumar Mahajan, Pratap Nathani

Room No: 206, New RMO Hostel, LTMG Hospital Campus, Sion, Mumbai 400022, India

Introduction: The prevalence of ventriculoatrial (VA) conduction varies from nearly 20% to 90%, depending on the population studied. This figure is based on small studies done for different arrhythmias. However, the prevalence of VA conduction in structurally normal hearts has not been well documented to the best of our knowledge.

Methods: Data was recorded in 47 consecutive adults without structural heart disease, undergoing electrophysiological study and ablation for tachyarrhythmias. AV nodal re-entrant tachycardia was excluded. All procedures were performed under local anesthesia in an anti-arrhythmic drug free state. The measurements for this study were performed after ablation. The PR, QRS, AH and HV intervals, atrioventricular Wenckebach point (AVWP) and anterograde effective refractory period of atrioventricular node (AVNERP) were measured. VA conduction was assessed; if absent, it was retested after isoprenaline. VA Wenckebach point (VAWP) and retrograde effective refractory period (VAERP) were recorded in patients showing VA conduction. Age, gender, PR, AH, HV, AVNERP and AVWP were assessed as correlates/predictors of VA conduction. One-sided Fisher's exact test and unpaired t test were used as necessary.

Results: The age of the patients was 37 ± 13 years. Twenty-one (45%) patients were men and 26 (55%) were women. VA conduction was present in 26 (55%) patients at baseline. Of the remaining 21 patients, 16 patients showed VA conduction after isoprenaline. Only 5 (11%) patients failed to reveal VA conduction even after isoprenaline. Of the variables studied, only the HV interval was significantly different (36.6 ± 10.6 vs 49.2 ± 5.8 ms, $p < 0.003$) in patients with VA conduction. All parameters of patients with baseline VA conduction and those with VA conduction only after isoprenaline were similar, except the QRS duration which was significantly higher in patients with baseline VA conduction (90 ± 20.9 vs 80.1 ± 8.4 ms, $p < 0.05$).

Conclusions: VA conduction is present in 55% of people with structurally normal hearts. Isoprenaline enables VA conduction in another 34% of these subjects. Age, gender and indicators of AV conduction such as PR interval, AH, AVNERP and AVWP do not differ whether VA conduction is present or absent. The HV interval is longer in patients without VA conduction. The QRS duration is more in patients with VA conduction at baseline as compared to those with VA conduction only after isoprenaline.

Idiopathic outflow tract ventricular arrhythmias

Karthi Gesan

India

Idiopathic ventricular arrhythmia

- 10% of ventricular arrhythmias occurs in structurally normal heart
- Classified into three groups:
  - Outflow tract ventricular arrhythmia
  - Idiopathic left ventricular tachycardia (ILVT)
  - Automatic ventricular tachycardia

Outflow tract arrhythmia – Our experience 2011–2013

- Total OT-VA cases: 18
- Male:Female: 6:12
- Age: 22–63 years
- Co morbidity: HTN 6 cases
- Symptoms: Palpitation and giddiness
- ECG in SR: Normal in 15 and incomplete RBBB in 3
- ECG in VA: LBBB morphology and inferior axis and transition at V4 – RVOT
- Clinical presentation: sustained VT-7 and PVC's and NSVT-11
- Holter: PVC's ranges from 16,600 to 59,000/24 h (15–50%)
- Echo: LV dysfunction-5 (2 old MI)
- MRI with contrast: 6 patients – 2 ARVC

Mapping system:

- CARTO 3 system-8
- Ensite Array balloon-5
- Ensite velocity-4 and 2D-1